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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,409	08/27/2003	Karl Schrodinger	16274.164	6421
22913	7590	06/02/2006	EXAMINER	
WORKMAN NYDEGGER (F/K/A WORKMAN NYDEGGER & SEELEY) 60 EAST SOUTH TEMPLE 1000 EAGLE GATE TOWER SALT LAKE CITY, UT 84111			BELLO, AGUSTIN	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/649,409

Applicant(s)

SCHRODINGER, KARL

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-31 and 33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 17-31 and 33 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17-31, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ewen (U.S. Patent No. 6,862,322).

Regarding claim 17, Ewen teaches an optical reception device (reference numeral 101 in Figure 3A); and an amplifier (reference numeral 102 in Figure 3A) connected to said reception device; said amplifier having a gain (inherent); and said amplifier including at least one control terminal (reference numeral 301 in Figure 3A) for changing said gain of said amplifier between at least two gain values. Ewen differs from the claimed invention in that Ewen fails to specifically teach that at least one of the at least two gain values is optimized for maximum sensitivity. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized at least one of the two gain values for maximum sensitivity, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (CCPA 1955). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized at least one of the two gain values for maximum sensitivity, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 18, Ewen teaches the receiver circuit according to claim 17, wherein said amplifier is a transimpedance amplifier (reference numeral 102 in Figure 3A).

Regarding claim 19, Ewen teaches that said amplifier has a feedback impedance (reference numeral 314 in Figure 3B) for influencing said gain of said amplifier.

Regarding claim 20, Ewen teaches that said feedback impedance (reference numeral 314 in Figure 3B) has an impedance value that is set by a signal at said control terminal (reference numeral 202 in Figure 3B).

Regarding claim 21, Ewen teaches that said feedback impedance (reference numeral 314 in Figure 3B) has a resistance value that is set by a signal at said control terminal (reference numeral 202 in Figure 3B).

Regarding claims 22 and 25, Ewen teaches that said feedback impedance is formed by an impedance network with at least one switching device (reference numeral 314 in Figure 3B) that is switched by said signal at said control terminal (reference numeral 202 in Figure 3B) and said switching device (reference numeral 314 in Figure 3B) alters said impedance of said feedback impedance (reference numeral 314 in Figure 3B) when said switching device is switched.

Regarding claim 23 and 26, Ewen teaches that said switching device is formed by a switching transistor (reference numeral 203 in Figure 2B).

Regarding claim 24 and 27, Ewen differs from the claimed invention in that Ewen fails to specifically teach that said switching transistor (reference numeral 203 in Figure 2B) is a MOS-FET transistor or a bipolar transistor. However, Ewen discloses that the use of other types of devices besides the N-type FET shown can be used, thereby suggesting either MOS-FET transistor or a bipolar transistor. Furthermore, both MOS-FET transistor and a bipolar transistor

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are very well known in the art and readily available. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ either MOS-FET transistors or bipolar transistors in the device of Ewen without departing from the spirit of the invention.

Regarding claim 28, Ewen teaches that said reception device is a photodiode (reference numeral 101 in Figure 3A).

Regarding claims 29, 30, and 33, Ewen differs from the claimed invention in that Ewen fails to specifically teach a package for packaging said optical reception device and said amplifier; said package being a T0-46 package, a TSSOP package, or a VQFN20 package, wherein the package has a terminal pin forming the control terminal. However, the claimed packages are standardized and readily available. One skilled in the art would clearly have recognized that the system of Ewen could have easily been implemented in any of the packages claimed, wherein the package includes a terminal pin forming the control terminal, without departing from the spirit or scope of the claimed invention. Furthermore, Ewen discloses that the invention can be implemented in any physical package (column 3 lines 4-10). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to surround the receiving circuit in package, said package being one of the well known and readily available T0-46 package, a TSSOP package, or a VQFN20 package, and include in the package a terminal pin forming the control terminal.

Regarding claim 31, Ewen teaches prescribing a gain value for an amplifier of the receiver circuit in dependence on a bandwidth prescribed for the receiver circuit; setting the gain value of the amplifier at a control terminal of the amplifier; and after setting the gain value of the amplifier, using the amplifier to amplify an output signal of an optical reception device (column

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5 line 63 – column 6 line 22). Ewen differs from the claimed invention in that Ewen fails to specifically teach determining the gain value in accordance with an equation:  $V = K / B$ , K specifying a maximum achievable bandwidth-gain product previously determined for the receiver circuit and B denoting the bandwidth prescribed for the receiver circuit. However, there being no physical difference between the device of Ewen and that of the claimed invention, it is clear that one skilled in the art could have determined the gain value in accordance with the equation claimed. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to determine the gain value in the device of Ewen in accordance with the equation claimed.

### ***Response to Arguments***

3. Applicant's arguments with respect to the amended claim 17 has been considered but is moot in view of the new ground(s) of rejection.

4. Applicant's arguments filed 3/21/06 have been fully considered but they are not persuasive. The applicant has argued that claim 31 is now allowable since the limitations of cancelled claim 32 have been added to claim 31. However, the examiner disagrees. As noted in the office action the examiner believes that there being no physical difference between the device of Ewen and that of the claimed invention, it is clear that one skilled in the art could have determined the gain value in accordance with the equation claimed. Furthermore, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In this case, the applicant notes in the specification that the bandwidth-gain product

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$(B*V)$  is approximately constant and dependent upon the configuration of the received circuit.

The applicant further notes that  $(B*V)$  can be determined by measurement, and  $(B*V)=K$ . As such, and given no structural difference between the applicant's claimed invention and Ewen's disclosure, the examiner maintains that  $(B*V)=K$  is an inherent measurable and determinable property of the circuit. Given that all of the variables are dependent on the circuit configuration and the applicant fails to positively recite a physical difference between the claimed invention and that of Ewen, the examiner asserts that through simple mathematical rearrangement, one skilled in the art could have arrived at the equation  $V=K/B$ .

### *Conclusion*

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB

  
AGUSTIN BELLO  
PATENT EXAMINER